



9.0 Inventory of Mitigation Measures



9.0 INVENTORY OF MITIGATION MEASURES

The mitigation measures below will be included as conditions of approval for the project. To ensure that the mitigation measures are properly implemented, a mitigation monitoring and reporting program will be included in the Final EIR pursuant to Section 21081.6 of the Public Resources Code which identifies the timing and responsibility for monitoring each measure. The developer will have the responsibility for implementing the measures, and the various City of Lake Forest departments will have the primary responsibility for monitoring and reporting the implementation of the mitigation measures.

AIR QUALITY

AQ-1 Prior to issuance of any Grading Permit, the City Engineer and the Chief Building Official shall confirm that the Grading Plan, Building Plans and specifications stipulate that, in compliance with South Coast Air Quality Management District Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the South Coast Air Quality Management District's Rules and Regulations. In addition, South Coast Air Quality Management District Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. The following measures shall be implemented to reduce short-term fugitive dust impacts on nearby sensitive receptors:

- All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust; watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day;
- Water trucks shall be utilized on the site and shall be available to be used throughout the day during site grading to keep the soil damp enough to minimize dust being raised by the construction operations;
- Replace ground cover in disturbed areas as quickly as possible;
- On-site vehicle speed shall be limited to 15 miles per hour;
- All on-site roads shall be paved as soon as feasible or watered periodically or chemically stabilized;
- All material transported off-site shall be sufficiently watered and securely covered to prevent excessive amounts of dust prior to departing the job site. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code;



- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip on a gravel surface to prevent dirt and dust from impacting the surrounding areas;
- All delivery truck tires shall be watered down and scraped down prior to departing the job site;
- Visible dust beyond the property line which emanates from the project shall be minimized to the extent feasible;
- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period; and
- Sweep streets at the end of the day.

AQ-2 The following measures shall be implemented during construction to substantially reduce NO_x related emissions. They shall be included in the Grading Plan, Building Plans, and contract specifications. Contract specification language shall be reviewed by the City prior to issuance of a grading permit. Reductions in particulate emissions shall also be realized from the implementation of these measures as well as Mitigation Measure AQ-1.

- Off-road diesel equipment operators shall be required to shut down their engines rather than idle for more than five minutes, and shall ensure that all off-road equipment is compliant with the CARB in-use off-road diesel vehicle regulation and SCAQMD Rule 2449.
- The following note shall be included on all grading plans: “During construction activity, the contractor shall utilize California Air Resources Board (CARB) Tier III certified equipment or better for all on-site construction equipment according to the following:
 - January 1, 2012 to December 31, 2014: All off-road diesel powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In addition, all construction equipment shall be outfitted with the BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
 - Post-January 1, 2015: If applicable, all off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards where available and commercially feasible.
 - A copy of each unit’s certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided to the City at the time of mobilization of each applicable unit of equipment.



- The contractor and applicant, if the applicant's equipment is used, shall maintain construction equipment engines by keeping them tuned and regularly serviced to minimize exhaust emissions.
- Use low sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.
- Utilize existing power sources (i.e., power poles) when available. This measure would minimize the use of higher polluting gas or diesel generators.
- Configure construction parking to minimize traffic interference.
- Minimize obstruction of through-traffic lanes and provide temporary traffic controls such as a flag person during all phases of construction when needed to maintain smooth traffic flow. Construction shall be planned so that lane closures on existing streets are kept to a minimum.
- Schedule construction operations affecting traffic for off-peak hours to the best extent when possible.
- Develop a traffic plan to minimize traffic flow interference from construction activities (the plan may include advance public notice of routing, use of public transportation and satellite parking areas with a shuttle service.)
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five minutes.

GREENHOUSE GASES

GHG-1 The proposed project shall include, but not be limited to, the following list of potential design features. These features shall be incorporated into the project design to ensure consistency with adopted statewide plans and programs. The project applicant shall demonstrate the incorporation of the following project design features prior to the issuance of building or occupancy permits as applicable.

Transportation

- Provide pedestrian connections to the off-site circulation network (building permit).
- Implement a trip reduction program, for which all employees shall be eligible to participate (occupancy permit). This measure is not applicable to residential uses.
- Provide a ride sharing program, for which all employees shall be eligible to participate (occupancy permit). This measure is not applicable to residential uses.



Energy Efficiency

- Design buildings to be energy efficient, 15 percent above Title 24 requirements (building permit).
- The landscape plan shall utilize strategically placed trees that shall shade building walls, particularly those containing the most windows (building permit).
- Install high efficiency lighting, and energy efficient heating and cooling systems (building permit).
- Reduce unnecessary outdoor lighting (building permit).

Water Conservation and Efficiency

- Install water-efficient irrigation systems (building permit).
- Comply with the landscape sustainability measures in the Sustainability Development Regulations of the *Serrano Summit Area Plan* (building permit).
- Install low-flow faucets and toilets (building permit).

Solid Waste

- Reuse and recycle construction waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard) (building permit).
- Provide interior and exterior storage areas for recyclables and adequate recycling containers located in public areas (occupancy permit).

BIOLOGICAL RESOURCES

BIO-1 Prior to the issuance of a grading permit, the Applicant shall conduct biological field surveys of the IRWD study area for Rayless raywort (*Senecio aphanactis*), a special status wildlife species that was not surveyed in the *Biological Reports*. Surveys shall be conducted in accordance with current California Department of Fish and Game (CDFG) or United States Fish and Wildlife Services (USFWS) survey protocols for the target species by a qualified biologist or botanist, in order to determine their presence or absence at the project site. (Source: OSA PEIR Mitigation Measure MM 3.4-1)

BIO-2 Prior to the issuance of a grading permit, the Applicant shall, in an area where a species or habitat is not covered by the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) has been identified, comply with the requirements of the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), if applicable. If the species or habitat is not protected under FESA or CESA, but is otherwise protected through the Migratory Bird Treaty Act or other similar regulatory act requirement, the Applicant shall provide suitable replacement habitat at a minimum of 1:1, and shall prepare and submit a mitigation plan for City approval that demonstrates that the replacement habitat is protected in perpetuity and that appropriate long-term habitat management is provided. The mitigation plan shall be prepared in consultation with and receive the approval of the agency regulating the species or habitat



(i.e., USFWS, CDFG, and the NCCP Non-Profit Corporation (i.e., the City)). The mitigation plan shall include the following, at minimum: detailed habitat impacts; mitigation acreage (1:1 ratio); mitigation location (i.e., where the proposed conservation or restoration will occur); the acreage of conservation or restoration that will be conducted; and how many trees/plants will be planted or translocated (when mitigating impacts to trees or rare plants); a planting plan and seed mixes; five-year maintenance and monitoring plans; source(s) of long-term site funding; conservation easements (if any); biological monitoring during grading activities; and fencing of any habitat area that would not be disturbed by construction. (Source: OSA PEIR Mitigation Measure MM 3.4-3)

- BIO-3 Prior to the issuance of a grading permit, the Applicant shall conform and comply with the applicable requirements of the Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) for the County of Orange Central and Coastal Subregion, including the payment of the appropriate in-lieu fee, or existing IRWD non-reserve banked acreage as applicable, to mitigate for the loss of coastal sage scrub and any other NCCP/HCP covered habitat and species observed on the project site.

For impacts to a Conditionally Covered Species (i.e., Southwestern willow flycatcher (*Empidonas traillii extimus*)), the Applicant shall prepare a mitigation plan. The mitigation plan shall be developed in coordination with USFWS, CDFG, and the NCCP Non-Profit Corporation (i.e., the City), and approved by the USFWS. The mitigation plan shall, at minimum:

- Address design modifications and other onsite measures that are consistent with the project's purposes, minimize impacts, and provide appropriate feasible protections;
- Provide for compensatory habitat restoration/enhancement activities at an appropriate location (which may include land in the Reserve system or other open space) and which may include planting of riparian trees and shrubs and/or cowbird trapping;
- Provide for monitoring and Adaptive Management of habitat, within the Reserve system including cowbird trapping, consistent with Chapter 5 of the NCCP/HCP.

The Applicant shall also demonstrate to the satisfaction of the Director of Development Service compliance with the following NCCP/HCP construction impact avoidance measures or such measure in effect at the time of construction:

1. To the maximum extent practicable, no grading of coastal sage scrub habitat that is occupied by nesting gnatcatchers shall occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected



slope stabilization, erosion control measures, and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide United States Fish and Wildlife Services/California Department of Fish and Game (USFWS/CDFG) with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, and any other coastal sage scrub Identified Species that are not otherwise flushed and shall carry out the following measures, to the extent practicable, in the context of the public health and safety considerations.

2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of coastal sage scrub habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or shall be conducted to locate gnatcatchers within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.
3. A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of coastal sage scrub. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably 14 calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist shall flush identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they shall be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It shall be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.
4. Following the completion of initial grading/earth movement activities, all areas of coastal sage scrub habitat to be avoided by construction equipment and personnel shall be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.
5. Coastal sage scrub identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist. (Source: OSA PEIR Mitigation Measure MM 3.4-2)



- BIO-4 Prior to the approval of grading plans, the Applicant would be required to prepare an application for fill of waters subject to the Army Corps of Engineers (ACOE) jurisdiction. If appropriate, a streambed alteration agreement shall be obtained from California Department of Fish and Game (CDFG). The Applicant shall submit an application to the Regional Water Quality Control Board (RWQCB) for a waste discharge requirement or waiver of waste discharge requirement. The Applicant shall also consider any other permits from the ACOE, CDFG, RWQCB, or any other applicable regulatory agency that may be necessary. (Source: OSA PEIR Mitigation Measure MM 3.4-4)
- BIO-5 To the extent feasible, all vegetation removal activities shall be scheduled outside the nesting season (typically February 15 to August 15) to avoid potential impacts to nesting birds. However, if initial vegetation removal occurs during the nesting season, all suitable habitat shall be thoroughly surveyed for the presence of nesting birds by a qualified biologist prior to commencement of clearing. If any active nests are detected, a buffer of at least 100 feet (300 feet for raptors) shall be delineated, flagged, and avoided until the nesting cycle is complete as determined by the biological monitor to minimize impacts. (Source: OSA PEIR Mitigation Measure MM 3.4.2)

EFFECTS FOUND NOT TO BE SIGNIFICANT

Aesthetics

- AES-1 Prior to issuance of a precise grading permit for the project, the applicant shall submit a photometric plan to the Development Services Department for review and approval. The plan shall specify the following:
- a. The lighting type and placement to ensure that the effects of security lighting are limited as a means of minimizing night lighting and the associated impacts to aesthetics. All light fixtures will use glare-control visors, arc tube suppression caps, and will use a photometric design that maintains 70 percent of the light intensity in the lower half of the light beam.
 - b. All interior floodlights, lighting and advertising (including signage), and other security lighting shall be directed away from adjacent uses and towards the specific location intended for illumination. All lighting shall be shielded to minimize the production of glare and light spill off-site. Landscape illumination and exterior sign lighting shall be accomplished with low-level unobtrusive fixtures.
 - c. The plan shall include the types and appearance of proposed residential light standards. (Source: OSA PEIR Mitigation Measure MM 3.1-1 to 3.1-4)

Cultural Resources

- CUL-1 Prior to the issuance of a grading permit for any site within the project area, a qualified archaeologist shall be retained by the applicant for that grading permit to provide professional archaeological services. The archaeologist shall be present at the pre-



- grading conference to establish procedures for archaeological resource surveillance. Those procedures shall include provisions for temporarily halting or redirecting work permit sampling, identification, and evaluation of resources deemed by the archaeologist to potentially be historical resources or unique archaeological resources under CEQA. If, before grading, any portions of the property subject to the grading permit have been identified as sites, which may have such resources present and may be impacted by development, the archaeologist shall conduct a site survey and records search and such further examination as may be needed to assess the significance of the resources. If the archaeological resource is determined to be a unique archaeological resource, options for avoidance or preservation in place shall be evaluated and implemented if feasible. In the event that avoidance or preservation in place is infeasible and the archaeologist determines that the potential for significant impacts to such resources exists, a data recovery program shall be expeditiously conducted. The archaeologist also shall conduct on-site archaeological monitoring for the grading operation. Should historical resources or unique archaeological resources be discovered during the grading operation, grading activities shall be modified to allow expeditious and proper analysis and/or salvage of the resources. Disposition of the resources shall be within the discretion of the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-1)
- CUL-2 The qualified archaeologist retained shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-2)
- CUL-3 Artifacts recovered shall be prepared, identified, and cataloged before donation to the accredited repository designated by the City of Lake Forest. State of California Guidelines for the Curation of Archaeological Collections shall be consulted regarding the treatment of recovered artifacts. Any artifacts determined to be insignificant shall be offered to local schools for use in educational programs. (Source: OSA PEIR Mitigation Measure MM 3.5-3)
- CUL-4 The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The qualified archaeologist retained shall prepare a final report to be filed with the site developer(s), the City of Lake Forest, and the South Central Coastal Information Center. The report shall include a list of specimens recovered, documentation of each locality, interpretation of artifacts recovered, and shall include all specialists' reports as appendices. (Source: OSA PEIR Mitigation Measure MM 3.5-4)
- CUL-5 Prior to issuance of a grading permit, a qualified paleontologist shall be retained by the site developer(s) to provide professional paleontological services. Specifically, during grading activities, the qualified paleontologist shall conduct on-site paleontological monitoring for the project site. Monitoring shall include inspection of exposed surfaces and microscopic examination of matrix to determine if fossils are present. The monitor shall have authority to divert grading away from exposed fossils temporarily in order to recover the fossil specimens. Cooperation and assistance from on-site personnel shall be



- provided to assist timely resumption of work in the area of the fossil discovery. (Source: OSA PEIR Mitigation Measure MM 3.5-5)
- CUL-6 The qualified paleontologist retained shall prepare monthly progress reports to be filed with the site developer(s) and the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-6)
- CUL-7 Fossils recovered shall be prepared, identified, and cataloged before donation to the accredited repository designated by the City of Lake Forest. (Source: OSA PEIR Mitigation Measure MM 3.5-7)
- CUL-8 The qualified paleontologist retained shall prepare a final report to be filed with the site developer(s) and the City of Lake Forest. The report shall include a list of specimens recovered, documentation of each locality, interpretation of fossils recovered, and shall include all specialists' reports as appendices. (Source: OSA PEIR Mitigation Measure MM 3.5-8)

Geology and Soils

- GEO-1 Prior to approval of grading plans, the project shall adhere to geotechnical recommendations outlined in Chapter 4.0, General Recommendations, of the *Geotechnical Exploration Report*, prepared by Leighton and Associates, Inc., dated January 11, 2010. Recommendations shall be noted on project grading plans and building specifications for the proposed Tentative Tract Map and any future projects proposed within the Area Plan. Grading plans and building specifications shall be reviewed and approved by the Building Official. (Source: OSA PEIR, Legal Requirements for Geology, Soils and Mineral Resources)

Hazards and Hazardous Materials

- HAZ-1 Prior to demolition activities, an asbestos survey shall be conducted by a qualified environmental professional to determine the presence or absence of asbestos. If present, asbestos removal shall be performed by a State-certified asbestos containment contractor in accordance with the Toxic Substance Control Act (TSCA), (15 U.S.C. Section 2601 et. seq.) Title 2 – Asbestos Hazard Emergency Response for handling asbestos. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)
- HAZ-2 If during demolition of the structures, paint is separated from the building material (e.g., chemically or physically), the paint waste shall be evaluated independently from the building material by a qualified environmental professional to determine its proper management. According to the Department of Toxic Substances Control, if paint is not removed from the building material during demolition (and is not chipping or peeling), the material may be disposed of as construction debris (a non-hazardous waste). The landfill operator shall be contacted in advance to determine any specific requirements they may have regarding the disposal of lead-based paint materials, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)



- HAZ-3 Prior to issuance of a grading permit, soil sampling shall occur within the portions of the project site that have historically been utilized for agricultural purposes and may contain pesticide residues in the soil, as determined by a qualified Phase II specialist. The sampling shall determine if pesticide concentrations exceed established regulatory requirements and shall identify further site characterization and remedial activities, if necessary. (Source: OSA PEIR, Legal Requirements for Hazards and Hazardous Materials)
- HAZ-4 At least three business days prior to any lane closure, the construction contractor shall notify the Orange County Sheriff's Department (OCSD) and Orange County Fire Authority (OCFA), along with the Development Services Department, of construction activities that would impede movement (such as road or lane closures) along roadways immediately adjacent to the development area, to allow for uninterrupted emergency access and maintenance of evacuation routes. (Source: OSA PEIR MM 3.7-3)

Hydrology and Water Quality

- HYD-1 All City landscape contractors and project developers shall be required, as part of their contract, to submit to the City a landscape design plan include the following elements:
- Maximized use of climate-appropriate plant species with minimum water and fertilizer requirements;
 - Watering shall be kept to the minimum necessary to maintain new landscaping;
 - Drip irrigation shall be used only until the California friendly landscaping is established; and
 - Minimal use of fertilizers and pesticides. (Source: OSA PEIR Mitigation Measure MM 3.8-2)
- HYD-2 Prior to the issuance of a grading permit, the Applicant shall be required to coordinate with the Nitrogen and Selenium Working Group in order to establish eligibility for the *de minimus* permit implemented by the Santa Ana Regional Water Quality Control Board. (Source: OSA PEIR Mitigation Measure MM 3.8-3)
- HYD-3 Prior to the issuance of a grading permit, the Applicant shall develop appropriate Best Management Practices, such as a nutrient management program, to reduce the amount of nutrients entering the watershed (see San Luis Rey Watershed Urban Runoff Management Program http://www.projectcleanwater.org/html/wurmp_sanluis_rey.html for an example of a management program that addresses nutrients). In addition, a pesticide management program shall be developed to the satisfaction of the City to reduce the amounts of pesticides entering the watershed through minimizing the use of pesticides and emphasizing non-chemical controls (see the City of San Francisco's Integrated Pest Management Program for example at <http://www.sfgov.org/site/frame.asp?u=http://www.sfwater.org/>). These plans shall be approved by the City prior to issuance of a grading permit. (Source: OSA PEIR Mitigation Measure MM 3.8-4)



Noise

NOI-1 Prior to grading permit issuance, the construction contractor shall demonstrate, to the satisfaction of the City of Lake Forest Development Services Department, the following:

- Construction contracts shall specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other State required noise attenuation devices.
- Construction noise reduction methods such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and nearby occupied uses, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors.
- The construction contractor shall submit a haul plan to the City, and the City shall ensure the planned haul truck routes avoid residential areas to the extent feasible.
- All construction entrances shall clearly post construction hours, allowable workdays, and the phone number of the job superintendent. This will allow surrounding owners to contact the job superintendent with concerns. If the contractor receives a justifiable noise-related complaint, appropriate corrective actions shall be implemented and a report taken indicating the action with a copy of the report provided to the reporting party upon request.
- Construction activities shall be prohibited between 8:00 PM and 7:00 AM the following day from Monday through Saturday, and no construction shall be permitted on Sundays and Federal holidays. Construction noise during the allowed construction time periods shall be exempt from the noise level provisions in the Noise Control Ordinance.

(Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)

NOI-2 The project applicant shall require by contract specifications that construction staging areas and earthmoving equipment shall be located as far away from occupied vibration and noise sensitive sites as possible (i.e., residential uses). Should construction activities take place within 25 feet of an occupied structure, a project specific vibration impact analysis shall be conducted. The vibration impact analysis shall provide measures for minimizing vibration impacts that exceed 85 VdB. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit. (Source: as modified from OSA PEIR Mitigation Measure MM 3.10-1)



Public Services

- PUB-1 Prior to issuance of a grading permit, the site developers shall enter into a Secured Fire Protection Agreement with OCFA that shall ensure an adequate level of service is maintained in the City. (Source: as modified from OSA PEIR Mitigation Measure MM 3.12-2)